

We claim:

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1. A device for delivering an aerosolized active agent to the lungs of a human patient, said device comprising a flow resistance modulator that modulates resistance of the flow of the aerosolized active agent formulation to produce an initial target flow rate of the aerosolized active agent formulation in a manner that is independent of flow rate monitoring and patient instruction.

10 2. The device of claim 1 wherein the flow resistance modulator modulates the flow of the aerosolized active agent formulation with time.

3. The device of claim 1 wherein the flow resistance modulator initially produces a initial target flow rate of less than 15 liters per minute.

4. The device of claim 3 wherein initial target flow rate is less than 10 liters per minute.

15 5. The device of claim 1 wherein the initial target flow rate is maintained for less than 10 seconds.

6. The device of claim 1 wherein the aerosolized active agent formulation comprises a dry powder active agent formulation

20 7. The device of claim 1 wherein the aerosolized active agent formulation comprises an active agent delivered in a bolus in nebulized form.

8. The device of claim 1 wherein the aerosolized active agent formulation comprises an active agent in admixture with a propellant.

9. The device of claim 1 wherein the aerosolized active agent formulation comprises an active agent solution.

10. The device of claim 1 wherein the aerosolized active agent formulation comprises an active agent suspension.

11. The device of claim 1 wherein the aerosolized active agent formulation comprises an active agent slurry.

5 12. The device of claim 1 wherein the device is a patient driven device.

13. The device of claim 1 wherein the active agent is selected from the group consisting of insulin, cyclosporin, parathyroid hormone, follicle stimulating hormone, alpha-1-antitrypsin, budesonide, human growth hormone, growth hormone releasing hormone, interferon alpha, interferon beta, growth colony stimulating factor, leutinizing hormone releasing hormone, calcitonin, low molecular weight heparin, somatostatin, 10 respiratory syncytial virus antibody, erythropoietin, Factor VIII, Factor IX, ceredase, cerezyme and analogues, agonists and antagonists thereof.

14. A method for delivering an aerosolized active agent to the lungs of a human patient, said method comprising delivering the aerosolized active agent formulation at a 15 high flow resistance for an initial time period.

15. The method of claim 13 wherein the high flow resistance is a resistance of between 0.4 and 2 (cm H<sub>2</sub>O) / SLM.

16. The method of claim 13 wherein the low flow resistance is a resistance of between 0 and 0.3 (cm H<sub>2</sub>O) / SLM.

20 17. The method of claim 13 wherein the high flow resistance corresponds to a flow rate of 15 liters per minute or less.

18. The method of claim 13 wherein the low flow resistance corresponds to a flow rate of 15-80 liters per minute.

25 19. The method of claim 13 wherein the initial time period is a period of less than 10 seconds.

20. The method of claim 19 wherein the initial time period is a period of less than 5 seconds.

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